

Application No. 10/522,054  
Amendment Dated August 27, 2008  
Reply to Office Action of June 9, 2008

**REMARKS**

In the Office Action dated June 9, 2008, claims 26-29, 31, 34-37 and 47-57 were examined with the result that all claims were rejected. The Examiner made the rejection final. In response, Applicant has amended claim 26. In view of the above amendments and following remarks, reconsideration of this application is requested.

Before turning to the rejections of record, Applicant would like to briefly summarize the amendments made to claim 26. More specifically, the preamble of claim 26 has been amended to clarify that the claimed method involves the recovery of a metal rich fraction from a metal ceramic based composite. This is to clarify that Applicant's process involves recovering a metal rich fraction as opposed to recovering ceramic particles as described in the prior art Nagle et al '531 reference cited by the Examiner. In addition, claim 26 has been amended to clarify that the crushing step reduces the size of the metal rich fraction in the composite versus the ceramic fraction. Again, this better distinguishes the claimed invention from the prior art Nagle et al '531 reference cited by the Examiner.

In the Office Action, the Examiner rejected claims 26, 31 and 47 under 35 U.S.C. §102(b) as being anticipated by Nagle et al U.S. 4,921,531. In addition, the Examiner rejected claims 27-29, 34-37 and 48-57 under 35 U.S.C. §103(a) as being unpatentable over Nagle et al '531. Applicant respectfully disagrees with the Examiner's conclusion, and believes the following comments apply to distinguish the present invention from Nagle et al '531 and thus overcomes both the anticipation and obviousness rejections.

The Examiner is of the opinion that although Nagle et al does not disclose the size of the components within the composite are increased by heating, the heating in Nagle et al initiates a reaction involving *in situ* precipitation and growth of that component within the composite. Therefore, the Examiner concludes that the heating described in Nagle et al inherently leads to increasing the size of the component.

As discussed in Applicant's previous response, the invention claimed in the present application is a process for recovering a metal rich fraction by separating out unwanted ceramic components from a metal-ceramic based composite. The separation of the unwanted ceramic

components from the metal-ceramic based composite is partially achieved by increasing the size of the ceramic components and then separating them from the metal fraction.

Nagle et al, on the other hand, is directed to a process for recovering second phase particles (i.e. ceramics).

In order to clarify claim 26 of the present application, the preamble of claim 26 has been amended to read: "A method of recovering of a metal rich fraction from a metal-ceramic based composite, the method including the steps of..."

Further, the recovery of the metal-rich fraction in the present application is achieved by increasing the size of the ceramic component, crushing the metal-ceramic based composite and then separating the increased size ceramic component from the other components. While the components may be in a suspension, they are not dissolved in a solvent.

In contrast to this, the recovery of the ceramic component in Nagle et al is achieved by precipitation of the ceramic components from a solvent metal matrix. Further, there is no "crushing" step required by the process of Nagle et al.

This difference is further clarified by amending claim 26 of the present application such that it refers to the crushing step being "to reduce the size of the metal rich fraction in the composite in comparison to the ceramic fraction in the composite."

The Examiner's objection seems to rely on the heating in the method of Nagle et al inherently leading to an increase in size of the ceramic component. Applicant submits that the heating in Nagle et al would be very unlikely to lead to an increase in size of the ceramic component, and that an increase in size of the ceramic component would be contradictory to the purpose of the method described in the cited document.

As discussed above, the process described in Nagle et al aims to recover second phase particles (i.e. ceramic components). The desired characteristics of these particles are listed in column 16, lines 45-54. These characteristics include "extremely fine particle size". Further, in column 7, lines 33-40 it is stated that it is an object of the "invention to provide a method for the formation of fine powders of second phase materials". On this basis, it seems reasonable to presume that the heating step in Nagle et al does **not** result in an increase in particle size of the

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ceramic component, and instead this would be avoided, as an increase in size may prevent the object of the invention being met.

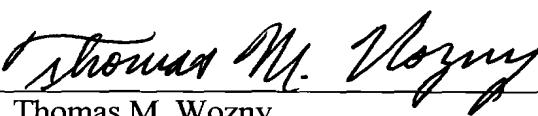
The Examiner should also refer to the description of the present application where the effect of the heating is described. Page 6, lines 24-25, describes the heating as bringing about coarsening of the  $\text{Al}_2\text{O}_3$  particles. This is shown in Figure 1. Coarsening of the ceramic component in Nagle et al would clearly be undesirable. Accordingly, the heating in the process of Nagle et al must not have the same effect on the particles as the heating step in the process of the present application.

Further, as stated on page 6, lines 30-31, of the description of the present application, the  $\text{Al}_2\text{O}_3$  particles increase in size to the range of approximately 15-100 $\mu\text{m}$  as a result of the heating. Column 7, lines 66-67 of Nagle et al states that the particles produced by the method of the cited document may range from about 0.01 to about 10  $\mu\text{m}$  and more preferably about 0.1 to about 5  $\mu\text{m}$ . Again, this supports the view that Nagle would not want any increase in size of the ceramic portion (i.e. the second phase). If that occurred, the recovered ceramic would be unsuitable for the uses stated. The method as claimed in the present application inherently excludes Nagle as, conversely, if the ceramic portion is retained in an "extremely fine particle size" (Nagle; column 16, lines 45-54) the method will not achieve Applicant's desired outcome.

An effort has been made to place this application in condition for allowance and such action is earnestly requested.

Respectfully submitted,

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